

CLAIMS

1. A method of controlling usage of network resources on a communications network, the method comprising acts of:

(A) creating one or more packet rules for analyzing packets received at one or more devices of the communications network, each rule including a condition and action to be taken if a packet received at a device satisfies the condition; and

(B) creating one or more service abstractions, each service abstraction representing a named set of one or more of the packet rules.

2. The method of claim 1, further comprising an act of:

(C) configuring a network device of the communications network with one or more packet rules according to at least one of the service abstractions.

3. The method of claim 2, wherein the act (C) comprises:

configuring a port module of a switching device of the communications network with one or more packet rules according to at least one of the service abstractions.

4. The method of claim 2, wherein the act (C) comprises:

configuring a firewall of a network device of the communications network with one or more packet rules according to at least one of the service abstractions.

5. The method of claim 1, further comprising an act of:

(C) distributing the one or more service abstractions to one or more network devices residing on the communications network.

6. The method of claim 1, further comprising an act of:

(C) associating one or more of the service abstractions with a user of the communications network.

7. The method of claim 1, further comprising an act of:

(C) creating one or more role abstractions, each role abstraction representing a role of

a user with respect to the communications network, and each role abstraction including a set of one more service abstractions.

8. The method of claim 7, further comprising an act of:

(D) configuring a network device of the communications network with one or more packet rules according to one of the role abstractions.

9. The method of claim 8, wherein act (D) comprises:

configuring a port module of a switching device of the communications network with one or more packet rules according to one of the role abstractions.

10. The method of claim 8, wherein act (D) comprises:

configuring a firewall of a network device of the communications network with one or more packet rules according to one of the role abstractions.

11. The method of claim 7, further comprising an act of:

(D) distributing the one or more role abstractions to one or more network devices residing on the communications network.

12. The method of claim 7, further comprising an act of:

(D) assigning one of the role abstractions to at least a first user of the communications network.

13. A system for controlling usage of network resources on a communications network, the system comprising:

a rule editing module to create one or more packet rules for analyzing packets received at one or more devices of the communications network, each rule including a condition and action to be taken if a packet received at a device satisfies the condition; and

a service editing module to create one or more service abstractions, each service abstraction representing a named set of one or more of the packet rules.

14. The system of claim 13, further comprising:  
logic to configure a network device with one or more packet rules according to at least one of the service abstractions.

5 15. The system of claim 14, wherein the logic comprises:  
port configuration logic to configure a port module of a switching device with one or more packet rules according to at least one of the service abstractions.

10 16. The system of claim 14, wherein the logic comprises:  
firewall logic to configure a firewall of a network device with one or more packet rules according to at least one of the service abstractions.

15 17. The system of claim 13, further comprising:  
a distribution module to distribute the one or more service abstractions to one or more network devices residing on the communications network.

20 18. The system of claim 13, further comprising:  
assigning logic to associate one or more of the service abstractions with a user of the communications network.

25 19. The system of claim 13, further comprising:  
a role editing module to create one or more role abstractions, each role abstraction representing a role of a user with respect to the communications network, and each role abstraction including a set of one more service abstractions.

30 20. The system of claim 19, further comprising:  
logic to configure a network device with one or more packet rules according to one of the role abstractions.

21. The system of claim 20, wherein the logic comprises:  
port configuration logic to configure a port module of a switching device with one or

more packet rules according to one of the role abstractions.

22. The system of claim 20, wherein the logic comprises:

5 firewall logic to configure a firewall of a network device with one or more packet rules according to one of the role abstractions.

23. The system of claim 19, further comprising:

a distribution module to distribute the one or more role abstractions to one or more network devices residing on the communications network.

24. The system of claim 19, further comprising:

assigning logic to assign one of the role abstractions to at least a first user of the communications network.

25. A system for controlling usage of network resources on a communications network, the system comprising:

a rule editing module to create one or more packet rules for analyzing packets received at one or more devices of the communications network, each rule including a condition and action to be taken if a packet received at a device satisfies the condition; and

means for creating one or more service abstractions, each service abstraction representing a named set of one or more of the packet rules.

26. A computer program product, comprising:

a computer readable medium; and

25 computer readable signals stored on the computer readable medium that define instructions that, as a result of being executed by a computer, instruct the computer to perform a process of controlling usage of network resources on a communications network, the process comprising acts of:

30 (A) creating one or more packet rules for analyzing packets received at one or more devices of the communication network, each rule including a condition and action to be taken if a packet received at a device satisfies the condition; and

(B) creating one or more service abstractions, each service abstraction representing a named set of one or more of the packet rules.

27. A method of controlling usage of network resources on a communications network,  
the method comprising acts of:

(A) creating one or more packet rules for analyzing packets received at one or more devices of the communication network, each rule including a condition and action to be taken if a packet received at a device satisfies the condition; and

(B) creating one or more role abstractions, each role abstraction representing a role of a user with respect to the communications network, and each role abstraction including a set of one more packet rules.

28. The method of claim 27, further comprising an act of:

(C) configuring a network device of the communications network with one or more packet rules according to one of the role abstractions.

29. The method of claim 28, wherein act (C) comprises:

configuring a port module of a switching device of the communications network with one or more packet rules according to one of the role abstractions.

30. The method of claim 28, wherein act (C) comprises:

configuring a firewall of a network device of the communications network with one or more packet rules according to one of the role abstractions.

31. The method of claim 27, further comprising an act of:

(C) distributing the one or more role abstractions to one or more network devices residing on the communications network.

32. The method of claim 27, further comprising an act of:

(C) assigning one of the role abstractions to at least a first user of the communications

network.

33. A system for controlling usage of network resources on a communications network, the system comprising:

5 a rule editing module to create one or more packet rules for analyzing packets received at one or more devices of the communications network, each rule including a condition and action to be taken if a packet received at a device satisfies the condition; and

10 a role editing module to create one or more role abstractions, each role abstraction representing a role of a user with respect to the communications network, and each role abstraction including a set of one more packet rules.

34. The system of claim 33, further comprising:

15 logic to configure a port module of a network device with one or more packet rules according to one of the role abstractions.

35. The system of claim 34, wherein the logic comprises:

20 port configuration logic to configure a port module of a switching device with one or more packet rules according to one of the role abstractions.

36. The system of claim 34, wherein the logic comprises:

25 firewall logic to configure a firewall of a network device with one or more packet rules according to one of the role abstractions.

37. The system of claim 33, further comprising:

30 a distribution module to distribute the one or more role abstractions to one or more network devices residing on the communications network.

38. The system of claim 33, further comprising:

35 assigning logic to assign one of the role abstractions to at least a first user of the communications network.

39. A system for controlling usage of network resources on a communications network, the system comprising:

a rule editing module to create one or more packet rules for analyzing packets received at one or more devices of the communications network, each rule including a condition and action to be taken if a packet received at a device satisfies the condition; and means for creating one or more role abstractions, each role abstraction representing a role of a user with respect to the communications network, and each role abstraction including a set of one more service abstractions.

40. A computer program product, comprising:  
a computer readable medium; and

computer readable signals stored on the computer readable medium that define instructions that, as a result of being executed by a computer, instruct the computer to perform a process of controlling usage of network resources on a communications network, the process comprising acts of:

(A) creating one or more packet rules for analyzing packets received at one or more devices of the communications network, each rule including a condition and action to be taken if a packet received at a device satisfies the condition; and

(B) creating one or more role abstractions, each role abstraction representing a role of a user with respect to the communications network, and each role abstraction including a set of one more service abstractions.